

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An optical fiber for the transmission of optical energy, the optical fiber comprising:

a cladding region including a photonic band gap structure with non-circular holes, the optical energy having a wavelength within the photonic band gap of the photonic band gap structure; and

a core region surrounded by the photonic band gap structure,

wherein the photonic band gap fiber guides the optical energy substantially within the core region with a loss of less than about 300 dB/km and wherein the optical energy is guided in a mode having a nonlinear refractive index of less than about $10^{-18} \text{ cm}^2/\text{W}$.

2. (Original) The optical fiber of claim 1 wherein the optical energy has a wavelength between about 150 nm and about 11 μm .

3. (Original) The optical fiber of claim 1 wherein the core region has a lower effective refractive index than the average refractive index of the photonic band gap structure.

4. (Original) The optical fiber of claim 1 wherein the core region is composed substantially of a gaseous material.

5. (Original) The optical fiber of claim 1 wherein the optical energy has a wavelength greater than about 1000 nm.

6. (Original) The optical fiber of claim 1 wherein the photonic band gap fiber guides the optical energy substantially within the core region with a loss of less than about 200 dB/km.

7. (Original) The optical fiber of claim 1 wherein the photonic band gap fiber guides the optical energy substantially within the core region with a loss of less than about 50 dB/km.

8. (Original) The optical fiber of claim 1 wherein the photonic band gap fiber guides the optical energy substantially within the core region with a loss of less than about 20 dB/km.

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